Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-30. (Canceled)

31. (Previously Presented) A method comprising:

receiving audio samples representing an input audio signal;

transforming the input audio samples into a vector of spectral values in a frequency domain; and

determining a value of a quantizing parameter,

including: determining the value of the quantizing parameter, such that a maximum quantized value does not exceed a maximum index of one or more corresponding codebooks; and

determining the value of the quantizing parameter based on a modified Newtonian search process, the determined value of the quantizing parameter being used to quantize the respective vector of spectral values to generate a vector of quantized values such that a total number of bits used for encoding the vector of quantized values does not exceed a maximum number of bits available for encoding the vector of the quantized values.

32. (Previously Presented) The method of claim 31 wherein the one or more codebooks are Huffman code tables.

33. (Previously Presented) The method of claim 31 wherein the value of the quantizing parameter is determined according to the following formula:

$$\text{global\_gain} \geq \left\lceil A \cdot \log_2\left(\frac{\text{MAX}|x_r(i)|}{[B-C]^D}\right)\right\rceil$$

wherein global_gain corresponds to the value of the quantizing parameter, A corresponds to a first constant, xr(i) corresponds to an original spectral value for frequency line i, B corresponds to a second constant representing a maximum quantized spectral value, C corresponds to a third constant, and D corresponds to a fourth constant.

34. (Previously Presented) The method of claim 31 including:

computing a first estimate and a second estimate for the quantizing parameter; and

performing a set of operations iteratively until a predetermined number of iterations is reached, including:deriving a new estimate for the quantizing parameter based on the previous estimates for the quantizing parameter.

35. (Previously Presented) The method of claim 34 wherein deriving the new estimate includes:

calculating a line tangent to a function representing the total number of bits used based on the previous estimates; and

calculating the new estimate based on an intercept between the line tangent calculated and a line representing the maximum number of bits available.

36. (Previously Presented) The method of claim 34 wherein performing the set of operations further including:

determining whether the total number of bits based upon the new estimate exceeds the maximum number of bits available;

if the total number of bits based upon the new estimate exceeds the maximum number of bits available, increasing the new estimate by a first factor; and

if the total number of bits based upon the new estimate does not exceed the maximum number of bits available, decreasing the new estimate by a second factor.

37. (Previously Presented) The method of claim 36 wherein the first factor and second factor are integer values.

38. (Previously Presented) The method of claim 34 wherein the value of the quantizing parameter determined with respect to one block of spectral values is stored in memory and used as an initial estimate for a next block of spectral values.

39. (Previously Presented) An apparatus comprising:

logic to receive input audio samples representing corresponding input audio signals;

logic to transform the input audio samples into a vector of spectral values in a frequency domain; and

logic to determine a value of a quantizing parameter,

including:

logic to determine the value of the quantizing parameter such that a maximum quantized value does not exceed a maximum index of one or more corresponding codebooks; and

logic to determine the value of the quantizing parameter based on a modified Newtonian search process, the determined value of the quantizing parameter being used to quantize the respective vector of spectral values to generate a vector of quantized values such that a total number of bits used for encoding the vector of quantized values does not exceed a maximum number of bits available for encoding the vector of the quantized values.

40. (Previously Presented) The apparatus of claim 39 wherein the value of the quantizing parameter is determined according to the following formula:

$$\text{global\_gain} \geq \left\lceil A \cdot \log_2 \left(\frac{\text{MAX}|x_r(i)|}{[B-C]^D} \right) \right\rceil$$

wherein global_gain corresponds to the value of the quantizing parameter, A corresponds to a first constant, xr(i) corresponds to an original spectral value for frequency line i, B corresponds to a second constant representing a maximum quantized spectral value, C corresponds to a third constant, and D corresponds to a fourth constant.

41. (Previously Presented) The apparatus of claim 39 including:

logic to compute a first estimate and a second estimate for the quantizing parameter; and

logic to perform a set of operations iteratively until a predetermined number of iterations is reached, including:

logic to derive a new estimate for the quantizing parameter based on the previous estimates for the quantizing parameter.

42. (Previously Presented) The apparatus of claim 41 wherein logic to derive the new estimate including:

logic to calculate a line tangent to a function representing the total number of bits used based on the previous estimates; and

logic to calculate the new estimate based on an intercept between the line tangent calculated and a line representing the maximum number of bits available.

43. (Previously Presented) The apparatus of claim 42 wherein logic to perform the set of operations further including:

logic to determine whether the total number of bits based upon the new estimate exceeds the maximum number of bits available;

logic to increase the new estimate by a first integer if the total number of bits based upon the new estimate exceeds the maximum number of bits available; and

logic to decrease the new estimate by a second integer if the total number of bits based upon the new estimate does not exceed the maximum number of bits available.

44. (Previously Presented) A system comprising:

a transformation unit to transform input audio samples representing corresponding audio signals into a vector of spectral values in a frequency domain;

a psychoacoustic modeling unit to analyze the input audio samples and generate a frequency mask; and

a bit allocator and quantizer unit coupled to the transformation unit and the psychoacoustic unit, the bit allocator and quantizer unit including:

logic to determine a value of a quantizing parameter,

including:

logic to determine the value of the quantizing parameter such that a maximum quantized value does not exceed a maximum index of one or more corresponding codebooks; and

logic to determine the value of the quantizing parameter based on a modified Newtonian search process, the determined value of the quantizing parameter being used to quantize the respective vector of spectral values to generate a vector of quantized values such that a total number of bits used for encoding the vector of quantized values does not exceed a maximum number of bits available for encoding the vector of the quantized values.

45. (Previously Presented) The system of claim 44 wherein logic to determine the value of the quantizing parameter includes:

logic to compute the value of the quantizing parameter such that a maximum quantized value does not exceed a maximum index of one or more corresponding codebooks, based upon the following formula:

$$global\_gain \geq \left\lceil A \cdot \log_2\left(\frac{MAX|x_r(i)|}{[B-C]^D}\right)\right\rceil$$

wherein global_gain corresponds to the value of the quantizing parameter, A corresponds to a first constant, xr(i) corresponds to an original spectral value for frequency line i, B corresponds to a second constant representing a maximum quantized spectral value, C corresponds to a third constant, and D corresponds to a fourth constant.

46. (Previously Presented) The system of claim 44 including:

logic to compute a first estimate and a second estimate for the quantizing parameter; and

logic to perform a set of operations iteratively until a predetermined number of iterations is reached, including:

logic to derive a new estimate for the quantizing parameter based on the previous estimates for the quantizing parameter.

47. (Previously Presented) The system of claim 46 wherein logic to derive the new estimate including:

logic to calculate a line tangent to a function representing the total number of bits used based on the previous estimates; and

logic to calculate the new estimate based on an intercept between the line tangent calculated and a line representing the maximum number of bits available.

48. (Previously Presented) The system of claim 47 wherein logic to perform the set of operations further including:

logic to determine whether the total number of bits based upon the new estimate exceeds the maximum number of bits available;

logic to increase the new estimate by a first integer if the total number of bits based upon the new estimate exceeds the maximum number of bits available; and

logic to decrease the new estimate by a second integer if the total number of bits based upon the new estimate does not exceed the maximum number of bits available.

49. (Previously Presented) A machine-readable medium comprising instructions which, when executed by a machine, cause the machine to perform operations including:

receiving audio samples representing an input audio signal;

transforming the input audio samples into a vector of spectral values in a frequency domain; and

determining a value of a quantizing parameter,

including: determining the value of the quantizing parameter such that a maximum quantized value does not exceed a maximum index of one or more corresponding codebooks; and

determining the value of the quantizing parameter based on a modified Newtonian search process, the determined value of the quantizing parameter being used to quantize the respective vector of spectral values to generate a vector of quantized values such that a total number of bits used for encoding the vector of quantized values

does not exceed a maximum number of bits available for encoding the vector of the quantized values.

50. (Previously Presented) The machine-readable medium of claim 49 wherein determining the value of the quantizing parameter includes:

determining the value of the quantizing parameter such that a maximum quantized value does not exceed a maximum index of one or more corresponding codebooks according to the following formula:

$$global\_gain \geq \left\lceil A \cdot \log_2 \left(\frac{MAX|x_r(i)|}{[B-C]^D} \right) \right\rceil$$

wherein global_gain corresponds to the value of the quantizing parameter, A corresponds to a first constant, xr(i) corresponds to an original spectral value for frequency line i, B corresponds to a second constant representing a maximum quantized spectral value, C corresponds to a third constant, and D corresponds to a fourth constant.

51. (Previously Presented) The machine-readable medium of claim 49 including:

computing a first estimate and a second estimate for the quantizing parameter; and

performing a set of operations iteratively until a predetermined number of iterations is reached, including:

deriving a new estimate for the quantizing parameter based on the previous estimates for the quantizing parameter.

52. (Previously Presented) The machine-readable medium of claim 51 wherein deriving the new estimate includes:

calculating a line tangent to a function representing the total number of bits used based on the previous estimates; and

calculating the new estimate based on an intercept between the line tangent calculated and a line representing the maximum number of bits available.

53. (Previously Presented) The machine-readable medium of claim 52 wherein performing the set of operations further including:

determining whether the total number of bits based upon the new estimate exceeds the maximum number of bits available;

if the total number of bits based upon the new estimate exceeds the maximum number of bits available, increasing the new estimate by a first factor; and

if the total number of bits based upon the new estimate does not exceed the maximum number of bits available, decreasing the new estimate by a second factor.